

# *Light Brown Apple Moth in California*

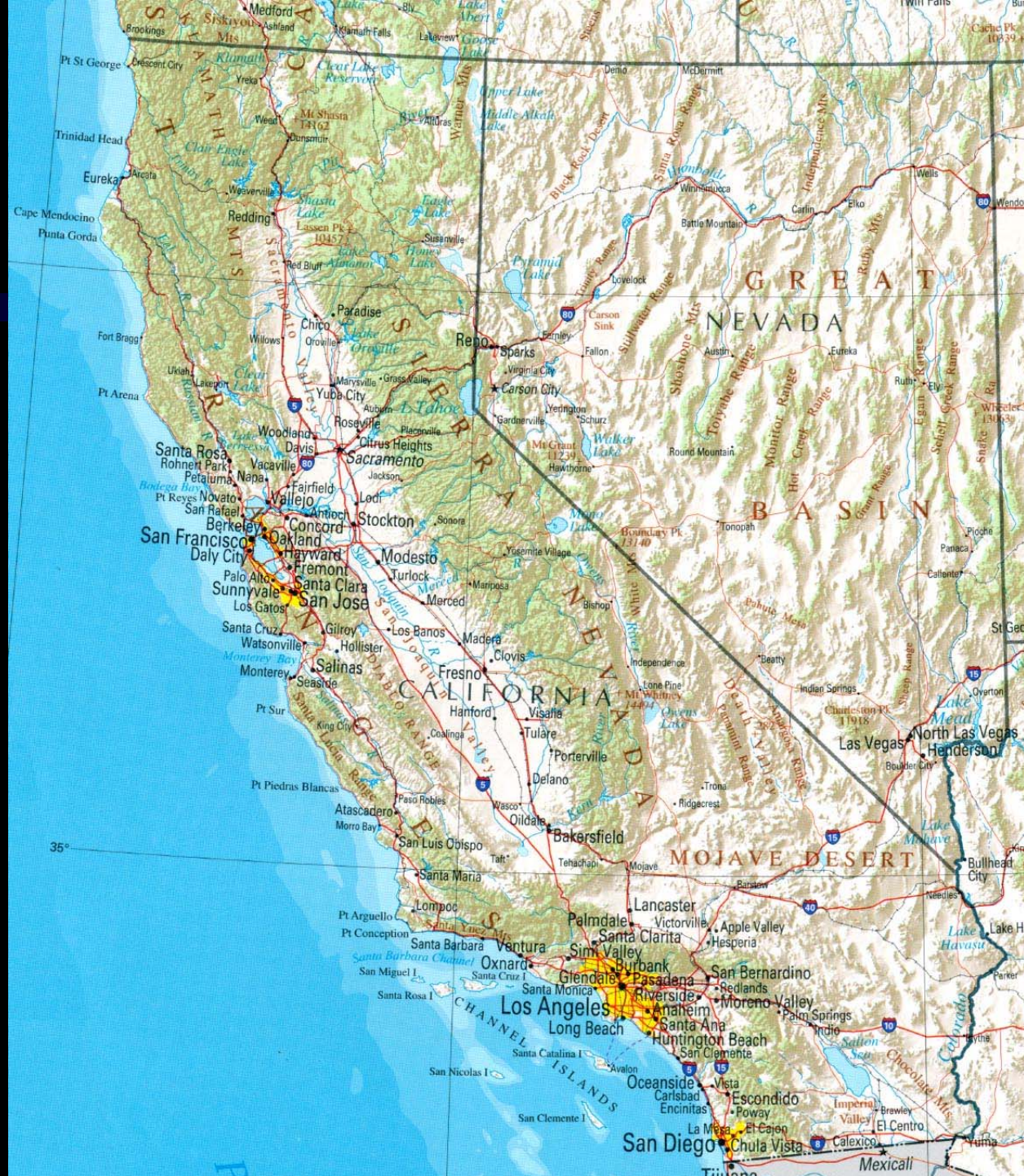
**Larry G. Bezark, Assistant Director**  
Plant Health and Pest Prevention Services



June 6, 2007

# *The Problem*

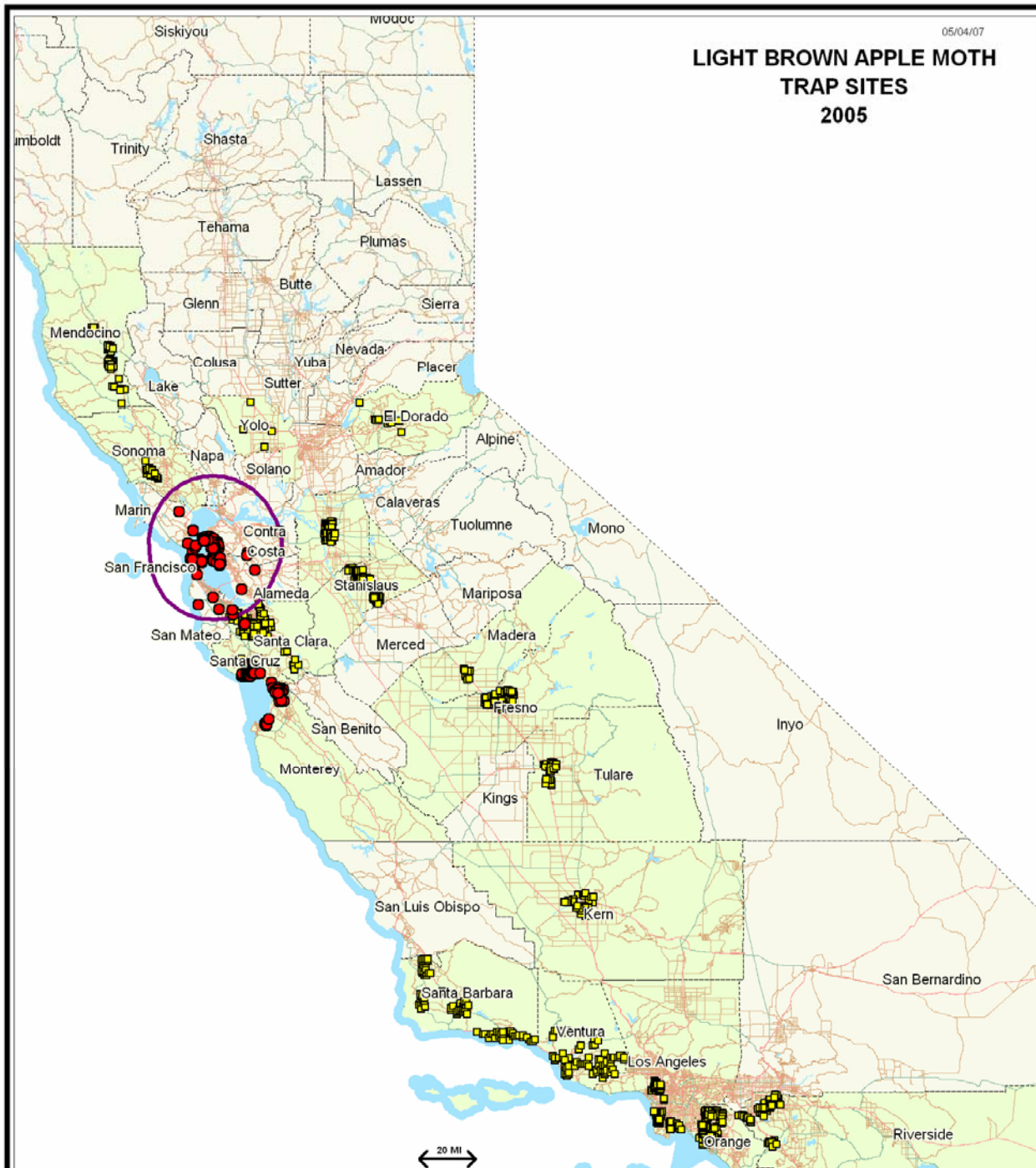
- Light brown apple moth is not part of CA regular trapping program; trapped under CAPS cooperative agreement in 2005.
- On February 6, 2007, a private citizen in Berkeley (Alameda County) reported that he had found 2 light brown apple moth adults in his blacklight trap during 2006.
- In response, pheromone baited traps were placed over a 9 square mile area of Alameda and Contra Costa counties.





05/04/07

# LIGHT BROWN APPLE MOTH TRAP SITES 2005



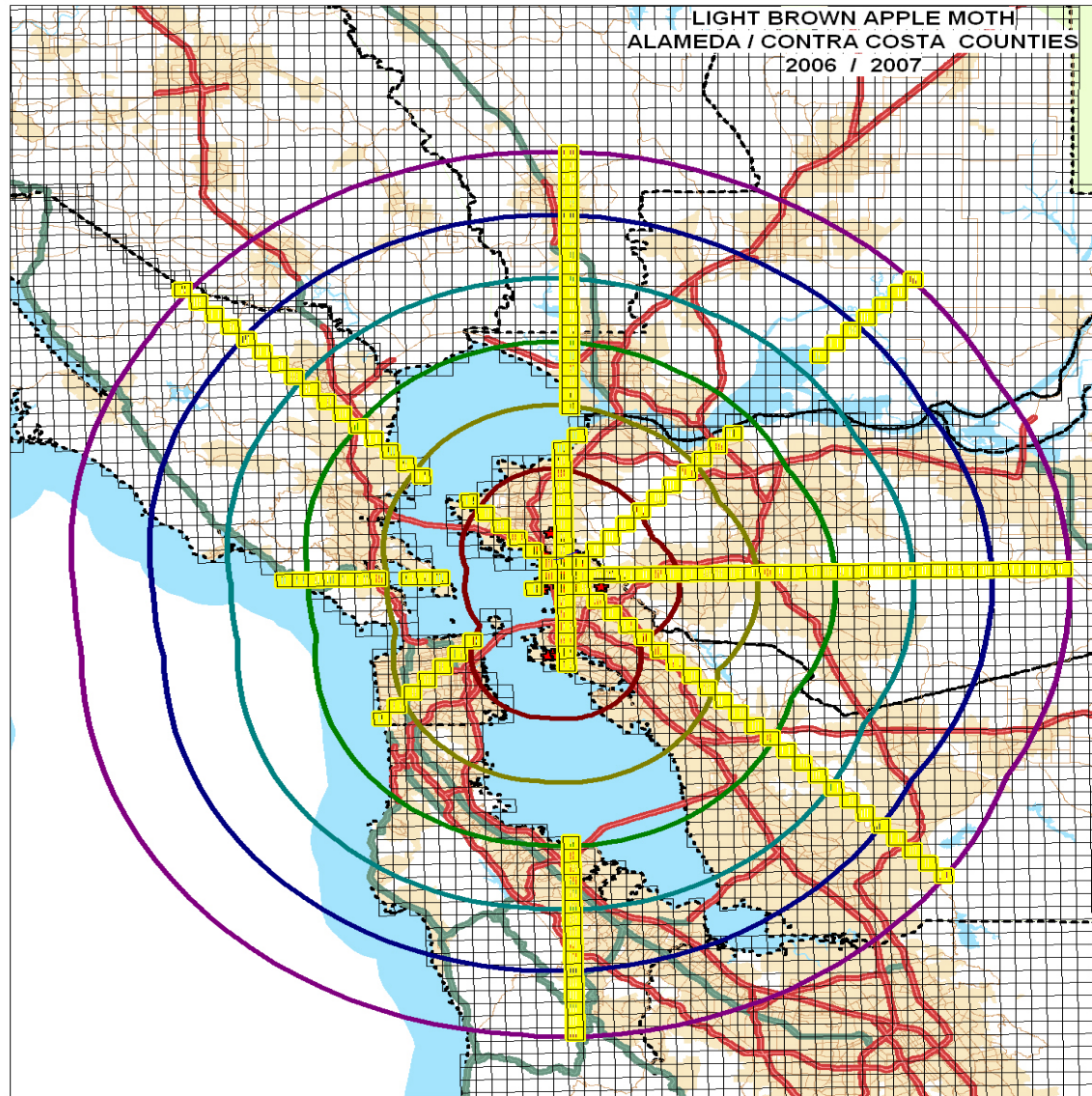
# *The Problem*

- On March 9, a light brown apple moth was confirmed from traps in both Alameda & Contra Costa counties.
- An international technical working group met via conference call for the 1<sup>st</sup> time on March 15.
- The USDA-ARS systematic entomology laboratory confirmed these identifications on March 16.
- Additional moths continue to be trapped.
- 3,612 moths have been trapped in 9 contiguous cities to date, (over 80% in Santa Cruz County)

# *Delimitation*

- Originally a generic 100-50-10 delimitation array was set out.
- The technical working group initially suggested 10 traps/square mile for a 30 mile radius.
- This recommendation changed to 5 traps/square mile to cover more ground more quickly.
- We modified this to the 5-mile ring concept to find the leading edge, then added spokes, and then filled in the gaps.

LIGHT BROWN APPLE MOTH  
ALAMEDA / CONTRA COSTA COUNTIES  
2006 / 2007



TRAP FIND



■ SPOKE GRID

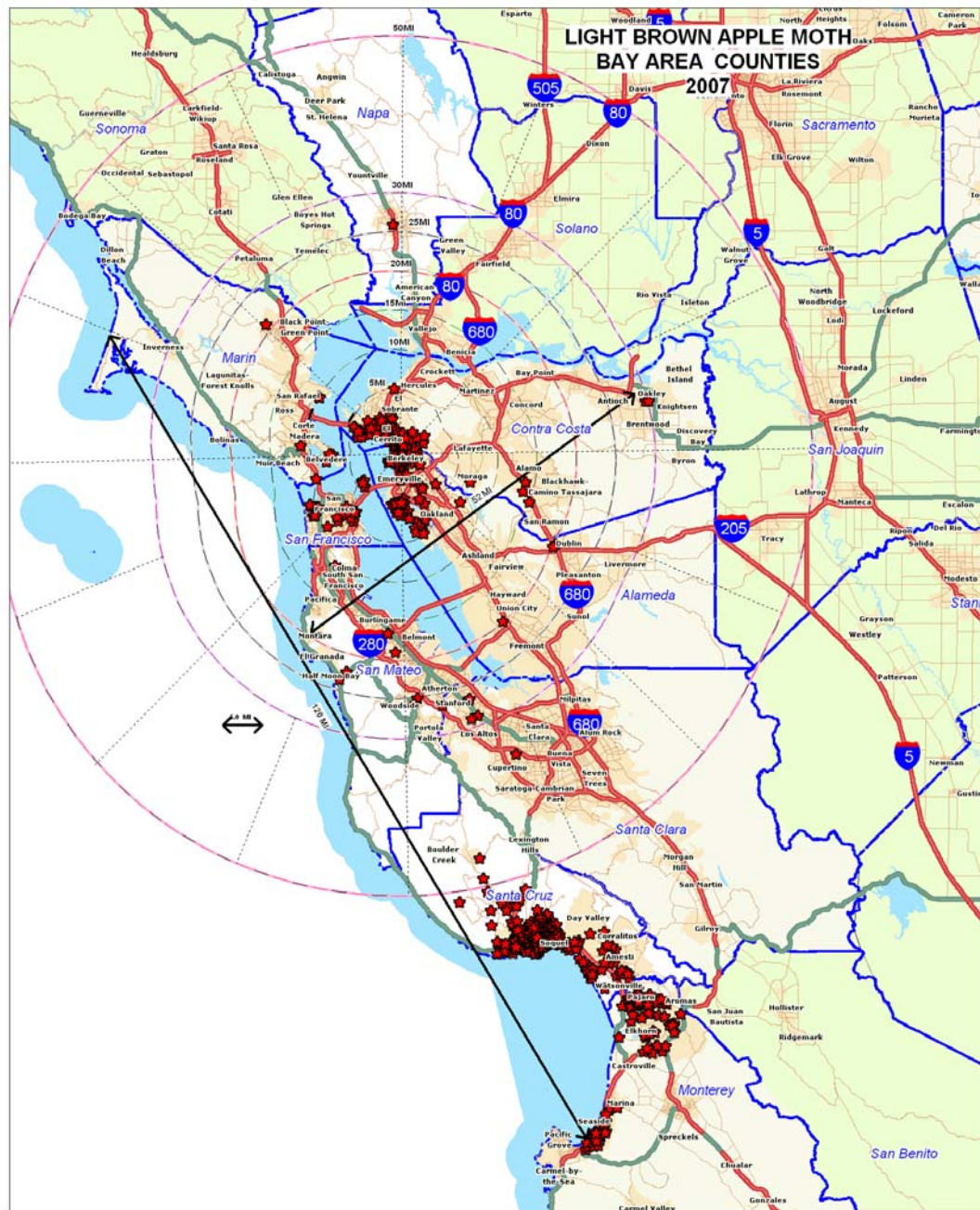


03/20/07



# LIGHT BROWN APPLE MOTH BAY AREA COUNTIES

2007



2007 TRAP FIND

★ CONFIRMED FINDS

5 MILE RADIUS  
10 MILE RADIUS  
15 MILE RADIUS

25 MILE RADIUS  
30 MILE RADIUS  
50 MILE RADIUS

06/04/07





# *Statewide Trapping Initiative*

- Traps are being placed statewide in nurseries, urban and rural areas, and in production agriculture outside the quarantine area.
- In coordination with existing pest trapping
- Detection traps 22,266 statewide
- Nursery 3,000: Delimitation 3,000

# *Distribution*

- Native to Australia
- Established in:
  - New Zealand, New Caledonia
  - British Isles
  - Hawaii



# *Biology*

- Lepidoptera, Family Tortricidae
- Multiple overlapping generations
- Temperature driven model
- 20-50 eggs layed dorsally
- 3-5 larval instars
- Overwinters as larvae





# *Host List*



- Over 250 species are at risk including:
- **Native Species -**
- oak, willow, pine, redwood, lupines
- **Crops -**
- peaches, plums, nectarines, apple, pear, citrus, peach, avocado, grapes, cherries, walnuts, vegetables
- **Horticultural Plants -**
- roses, shrubs, flowers,

# *Regulatory Actions Taken*



- 9 counties have been quarantined and actions are being taken in accordance with the Federal Order
- Nurseries are treated where larvae are found.
- Immediately, all regulated entities within 1.5 miles of any detection outside the quarantine area will be placed under a quarantine hold.
- Trace backs and trace forwards are being conducted.

# *Regulatory Actions*

- The USDA and CDFA regulatory staff began to place nurseries under a compliance agreement, 274 now in place.
- Informational meetings for the growers and packers in the area are being held on a regular basis as needed.
- An emergency quarantine went into effect on April 20.
- A Federal Order was issued on May 2<sup>nd</sup>.



# *Federal Order Affected Areas*



- This quarantine will encompass all LBAM-infested counties of California and the entire State of Hawaii.

# *Federal Order*



- In California, LBAM-infested counties are quarantined through a two-tiered approach that regulates the interstate movement of host articles from quarantined areas based on inspection verifying pest-freedom.
- In Hawaii, the interstate movement of host articles is regulated uniformly across the entire State based on inspection verifying pest freedom.

# *Technical Working Group*



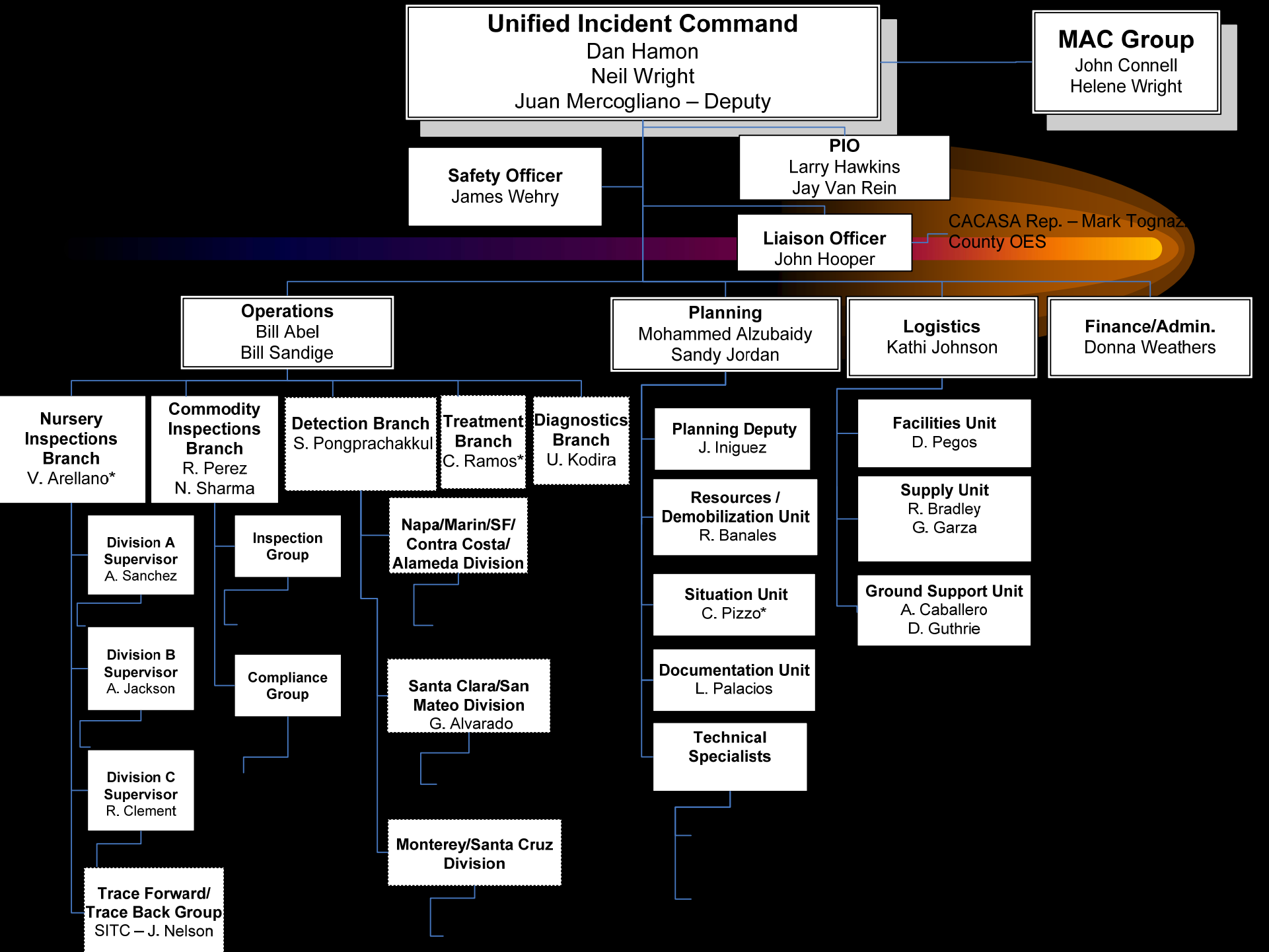
- International group made up of scientists and regulatory officials.
- Convened several times by phone.
- Met in San Jose 17-18 May to visit the affected area and discuss and make recommendations.
- Reviewed all eradication/control options.
- Draft recommendations being finalized.



# *Information Management*



- ICS implemented, HQ in Watsonville
- Daily situation reports generated from:
  - Trapping
  - Detection
  - Regulatory
  - Mapping
  - Outreach



# *Contain, Suppress, Eradicate Efforts*



- Eradication will take several years
- Eradication will encompass several tools
- First actions are to go after the outliers
  - Napa
  - Oakley
  - Others to follow
- Mass trap nurseries in Santa Cruz



# *Information Available*

- CDFA and USDA have information available to the public via the following websites:
  - [www.cdfa.ca.gov](http://www.cdfa.ca.gov)
  - [www.aphis.usda.gov](http://www.aphis.usda.gov)
- Sites are refreshed as new information is available and as new maps and quarantine areas are updated.

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**Hot Topic:** [LIGHT BROWN APPLE MOTH QUARANTINE INFORMATION](#)

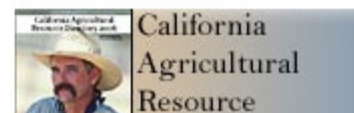
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SELECT TERMS BELOW to SEE LINKS to MORE INFORMATION.

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## Light Brown Apple Moth

  
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### Light Brown Apple Moth Information



Light brown apple moth (LBAM) is an exotic pest that has recently been discovered in portions of the San Francisco Bay Area, click [here](#) to see the map. LBAM is a native pest to Australia and New Zealand, and has become established in Hawaii. This moth can affect a wide variety of plants, flowers, fruits and vegetables, for a full host list and pest description, click [here](#). For information about LBAM and its **Impact on You**, click [here](#) to see a full color brochure. There are ways that you can help prevent the spread of LBAM, to learn **How You Can Help**, click [here](#) for a full color brochure.

**To prevent the spread of LBAM, do not remove plant materials from your home.** Please dispose of green waste in an approved green waste bin provided by your county. Prior to moving green waste off your property contact your County Agriculture Commissioner for approved green waste disposal sites, click [here](#) for a list of California counties linked to their respective agriculture commissioner.

#### ADDITIONAL INFORMATION:

- ◆ [LBAM Quarantine Maps](#) (PDF file, 780

#### ◆ Press Releases

- [CDFA - 4/20/2007](#) Quarantine In Place For Light Brown Apple Moth
- [CDFA - 4/13/2007](#) Santa Clara County Infested with Light Brown Apple Moth
- [CDFA - 4/2/2007](#) San Francisco, Marin Counties Infested with Light Brown Apple Moth
- [CDFA - 3/28/2007](#) CDFA Sets Interim Regulatory Action for Light Brown Apple Moth Infestation in East Bay
- [CDFA - 3/22/2007](#) Light Brown Apple Moth Detected in East Bay
- [USDA - 3/22/2007](#) USDA Confirms Light Brown Apple Moth
- [CACASA - 3/22/2007](#) County Agricultural Commissioners

#### ◆ Latest Situation Report

- [4/24/2007](#) (33 KB PDF)

This site will be updated as new information becomes available.



## Environmental Impact

- LBAM has the potential to devastate California's natural ecosystems, further threatening endangered flora and fauna species.
- Establishment of this moth will cause direct environmental damage via increased pesticide use by commercial and residential growers.

## How Does This Pest Spread?

- This pest has previously been intercepted on foreign produced commodities such as fruits, vegetables and cut flowers.
- LBAM is most likely to spread via people moving infested plants, fruits and vegetables.



Larva feeding damage on an avocado



[www.cdffa.ca.gov](http://www.cdffa.ca.gov)

3/07 version 1

## Light Brown Apple Moth (LBAM)

Have you seen this Pest?



To report a suspect pest call:

1-800-491-1899

California Department of Food and Agriculture  
or your  
County Agriculture Commissioner

## Where Does it Originate?

- This moth is originally from Australia, and has become established in New Zealand, New Caledonia, Hawaii and the British Isles.
- It has been recently discovered in portions of the San Francisco Bay Area.

## What to Look For?



If you see signs of damage or the pest itself, call 1-800-491-1899

## What does its Presence in California Mean?

- Because California has such a diverse range of agriculture and natural plant life, this makes California highly susceptible to exotic pest invaders.
- LBAM is an exotic pest species, meaning it does not naturally occur here and it has no natural enemies to reduce its population.
- LBAM has a broad host plant range, meaning it feeds on and damages plants and trees of a wide variety.
- Over 250 plants are at risk of being attacked by this moth. This includes but is not limited to: apple, pear, citrus, peach, avocado, oak, willow, walnut, pine, eucalyptus, roses, jasmine, strawberry, table and wine grapes, berries and other ornamental shrubs, bushes and trees.

## Trapping Methods



Traps like the one above, are placed in host trees. The trap has a pheromone used to attract male LBAM. It has a sticky card placed in the bottom of the triangle to capture the insect.

## How Significant is LBAM to You?

- If you are a gardener, LBAM can potentially ruin your vegetable and flower gardens.
- This pest attacks native and ornamental, fruit and vegetable plants and has the potential to severely damage residential landscapes, orchards and agricultural crops including grapes.

## Economic Impact

As shown in this US map, over 80% of the country has a climate that can support LBAM. Bay Area climate is conducive to LBAM growth, development and establishment. If this exotic pest is not eradicated in a timely manner, the annual economic loss would exceed \$70 million in lost jobs and infrastructure. Since the host list is so broad, the entire impact to California will be more than \$100 million in economic losses. California is the nation's leader in agricultural exports and in 2003 shipped more than \$7.2 billion in both food and agricultural commodities around the world.



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## Other Ways You Can Help



You may be asked to place a trap, like one above, in your trees. The traps use a lure to attract male LBAM, which are caught on a sticky insert. There are no pesticides used in this trap.



Help Us Protect California! For more information visit: [www.cdffa.ca.gov/phpps](http://www.cdffa.ca.gov/phpps)  
Click on the Light Brown Apple Moth link.



[www.cdffa.ca.gov](http://www.cdffa.ca.gov)

## Light Brown Apple Moth (LBAM)

A Threat to California's Environment



What Can You Do to Help Protect California's Environment?

Information Provided by:  
California Department of Food and Agriculture  
and your  
County Agriculture Commissioner

## Please Help Us Protect California From Invasive Exotic Pest Species!

### Where Does it Originate?

- It has been recently discovered in portions of the San Francisco Bay Area.
- This moth is native to Australia and has become established in New Zealand, New Caledonia, Hawaii and the British Isles. Don't bring/accept plants from these locations.

### How Significant is LBAM to You?

- If you are a gardener, LBAM can potentially ruin your vegetable and flower gardens.
- This pest attacks native and ornamental, fruit and vegetable plants and has the potential to severely damage residential landscapes, backyard fruit trees and community gardens.

Do not remove plant material from your yard!  
Help stop the spread of this environmental pest!  
[www.cdffa.ca.gov/phpps](http://www.cdffa.ca.gov/phpps)  
(See: How Can You Help)

### What Does its Presence in California Mean?

- California's diverse range of natural plant life and horticulture makes it highly susceptible to exotic pest invaders.
- LBAM is an exotic pest species, meaning it does not naturally occur here and it has no natural enemies to control its population.
- LBAM has a broad host plant range, meaning it feeds on and damages a wide variety of plants and trees.
- Over 250 plants are at risk of being attacked by this moth. This includes but is not limited to: oak, willow, walnut, pine, redwood, eucalyptus, apple, pear, citrus, peach, avocado, roses, jasmine, strawberry, table and wine grapes, berries and other ornamental shrubs, bushes and trees.

### Environmental Impact

- LBAM has the potential to harm California's natural ecosystems by displacing our native species and threatening our unique biodiversity.
- Establishment of this moth in California will harm our environment, causing increased pesticide use to minimize the damage.

### How Does This Pest Spread?

- This pest has previously been intercepted on foreign produced commodities such as fruits, vegetables and cut flowers. These items are found in commercial cargo and passenger baggage returning to the U.S. mainland.
- LBAM is most likely to spread via people moving infested plants, fruits and vegetables.

"In order to prevent the spread of light brown apple moth, please do not remove plants, flowers, fruits or vegetables from your property, unless disposed of properly."

— CDFA Pest Exclusion Branch  
Nick Condos, Branch Chief

### How Can You Help?

- All plant material must be disposed of in an approved green waste facility by you or a landscaper.
- In neighborhoods with curbside green waste service provided by the county, continue to use your provided green waste bins.
- Please check the Web site at: [www.cdffa.ca.gov/exoticcountdown.htm](http://www.cdffa.ca.gov/exoticcountdown.htm). Your county will have information regarding approved sites.

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# *Outreach Activities*



- Semi-weekly conference calls with CDFA, USDA & infested county agricultural commissioners
- Weekly conference calls with industry leaders and all county agricultural commissioners
- Meetings with local elected officials
- CDFA & USDA Departmental press releases
- Pest Advisories and compliance agreements for nursery information and regulatory actions



